Draft Nuclear Waste Arena Strategic Plan Chapter

The Nuclear Waste Safety strategic arena encompasses the Nuclear Regulatory Commission's (NRC) regulatory activities associated with uranium recovery, decommissioning, storage of spent nuclear fuel, transportation of radioactive materials, and disposal of radioactive wastes. Nuclear waste is a byproduct of the use of radioactive materials. Such waste is produced by nuclear reactors that generate electric power, as well as fuel processing plants, uranium recovery operations, and institutions such as hospitals and research facilities. It also results from decommissioning nuclear facilities that are permanently shut down. High-level radioactive waste results primarily from the fuel used by reactors to produce energy. Low-level radioactive waste results from reactor operations, and from medical, academic, industrial, and other commercial uses, and generally contains relatively limited concentrations of radioactivity.

Nuclear Waste Statutory Authority	
Protection of public health and safety	- Atomic Energy Act of 1954, as amended - Energy Reorganization Act of 1974, as amended - Energy Policy Act of 1992 - Hazardous Materials Transportation Uniform Safety Act of 1990 - Low-Level Radioactive Waste Policy Act of 1980 - Low-Level Radioactive Policy Amendments Act of 1985 - Nuclear Waste Policy Act of 1982 - Nuclear Waste Policy Amendments Act of 1987 - Uranium Mill Tailings Radiation Control Act of 1978, as amended - West Valley Demonstration Project Act of 1980 - Waste Isolation Pilot Plant Land Withdrawal Act of 1992
Protection of the environment	- Atomic Energy Act of 1954, as amended - Endangered Species Act - Low-Level Radioactive Waste Policy Act of 1980 - Low-Level Radioactive Waste Policy Amendments Act of 1985 - National Historic Preservation Act - Nuclear Waste Policy Act of 1982 - Nuclear Waste Policy Amendments Act of 1987 - Uranium Mill Tailings Radiation Control Act of 1978, as amended - West Valley Demonstration Project Act of 1980 - National Environmental Policy Act (NEPA)
Common defense and security and safeguards	- Atomic Energy Act of 1954, as amended - Energy Reorganization Act of 1974, as amended - Nuclear Non-Proliferation Act of 1978

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Strategic Goal: Prevent adverse impacts to the current and future public health and safety and the environment and promote common defense and security.

Strategic Goal Measures and Metrics

Measure	Metric
1. Number of deaths resulting from acute radiation exposures.	Zero
2. Number of significant radiation exposures that meet NRC criteria for abnormal occurrence[1].	Zero
3. Number of releases of radioactive material regulated by the NRC that have adverse impact on the environment[2].	Zero
4. Number of radiological sabotages, losses, substantiated cases of actual theft[3], or diversion of radioactive waste and nuclear materials.	Zero

These measures represent occurrences which would require the NRC to submit abnormal occurrence reports to Congress. These strategic measures represent events which the Commission has determined to be significant from the standpoint of public health and safety. The above four measures would identify occurrences from activities regulated in this strategic arena, including uranium recovery, decommissioning, interim storage of spent nuclear fuel, transportation of radioactive materials, and disposal of radioactive wastes. Any occurrence may be considered a failure to achieve the strategic goal for this arena.

[1]Significant radiation exposures are those exposures that meet the NRC's criteria for reporting abnormal occurrences to Congress.

[2] For measuring this goal, releases of radioactive material that have the potential to cause "adverse impact" are those that exceed the limits for reporting to the NRC immediately or within 24 hours of discovery, as provided by 10 CFR 20.2202.

[3]A "loss or theft" is an event that meets the NRC's criteria for reporting abnormal occurrences to Congress.

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Performance Goal: Maintain safety, protection of the environment, and the common defense and security.

NRC will continue to protect the public, workers, and the environment and ensure that licensed and authorized activities will not be inimical to the common defense and security. This will be accomplished by ensuring that regulated waste arena activities are undertaken consistent with applicable statutes and regulations. In so doing, NRC will continue to provide reasonable assurance that adverse impacts caused by radiological exposure[4] will be prevented for facilities and activities associated with uranium recovery, decommissioning, storage of spent nuclear fuel, transportation of radioactive materials, and disposal of nuclear waste. This is NRC's primary performance goal, which has a higher priority than the other performance goals.

The Nuclear Waste Safety arena consists of a diverse set of regulatory programs and activities for assuring safety and protecting the environment from the activities NRC regulates. For this arena, NRC will structure its activities to ensure current levels of safety are maintained. The current levels of attention and activities vary because of the diversity of our programs, the type of oversight activities, and associated issues. For work related to the future disposal of **high-level waste**, the U.S. Department of Energy (DOE) continues to characterize the candidate geologic repository site at Yucca Mountain, Nevada, in preparation for potential site recommendation and license application submittal to NRC. Consistent with DOE's schedule for the next few years, NRC will continue to focus its activities on preparing for licensing by finalizing a risk-informed regulation, developing a review plan, and continuing to resolve key technical issues most important to safety as part of its pre-licensing consultation with DOE. For the **low-level waste** program, no new disposal facilities have been opened, and the three operating facilities are in Agreement States. As a result, NRC's focus will be to maintain a consistent national program and provide support to the States, as requested, to resolve specific technical issues and to review requests for onsite disposal. In contrast to the low-level waste program, our program for **decommissioning** nuclear reactors and material or fuel cycle facilities will receive more attention as it prepares for a rulemaking on release of solids and transitions to a more risk-informed and streamlined process through the preparation of implementing guidance for the recently finalized license termination rule. There are many issues to address as guidance is developed and applied for the first time to decommissioning actions. For our **uranium recovery** activities, most of the work supporting the safety oversight of DOE's remedial actions to clean up inactive mill sites is completed. Thus, the program's focus will be on controlling the radiological and non-radiological hazards of mill tailings sites and assuring the safe operation of uranium extraction facilities.

[4]The Uranium Mill Tailings Radiation Control Act includes responsibility for non-radiological impacts on public health.

For certain waste arena activities located in Agreement States (i.e., uranium recovery, low-level waste disposal and non-reactor decommissioning), NRC has relinquished regulatory authority to the Agreement States. The adequacy and compatibility of these State programs, compared with NRC's own regulatory programs is important to assure that a uniform nuclear safety policy exists throughout the nation. Therefore, safety performance reflects the results of the collective efforts of the NRC, the Agreement States, and the regulated community.

NRC will assure that interim storage of spent nuclear fuel and transportation of radioactive materials are maintained at the highest levels of safety commensurate with the risks associated with such activities. In this regard, as the amount of spent nuclear fuel increases and more licensees begin decommissioning, increased reliance on interim storage will become necessary for continued plant operation and for decommissioning of nuclear power plants. As a result, NRC will continue to review and license independent spent fuel storage installations, including a review of safeguards-related information, and will continue to review and certify dry cask storage designs to ensure adequate protection of the public health and safety. Similarly, to meet the nation's transportation needs for nuclear commerce and for transportation of spent nuclear fuel and other radioactive materials, NRC will review transportation package designs and approve shipment routing and related safeguards information. NRC will continue to identify and resolve safety and safeguards-related issues and will assess and use risk insights in reaching regulatory decisions associated with interim storage and transportation. NRC will continue to assist and coordinate with DOE, the U.S. Department of Transportation, and the International Atomic Energy Agency to foster consistent regulatory approaches.

Finally, the Nuclear Waste Safety Arena programs and activities will continue to focus on protecting the environment now and for the future. Protecting the environment, a very significant element of this performance goal, will continue to be accomplished by assuring that NRC's actions comply with its statutory obligations such as the Atomic Energy Act, the National Environmental Policy Act, the Uranium Mill Tailings Radiation Control Act, and other associated requirements (e.g., the Endangered Species Act and the National Historic Preservation Act).

Strategies

- *We will continue developing a regulatory framework and incrementally will use risk-informed and less prescriptive performance-based approaches, where appropriate.*

  For the waste arena programs, the regulatory framework that defines adequate safety is in various stages of revision or development. For some programs, such as storage, transportation, and low-level waste, the regulations and guidance are relatively mature, but must be maintained. For other evolving programs, such as high-level waste and decommissioning, regulations are being revised or else have been recently finalized to

establish requirements. For these programs, it is also important to develop the technical basis to confirm the adequacy of our regulations and guidance. This is particularly important in the waste arena in areas of uncertainty such as groundwater flow and radio nuclide transport through the environment and the effectiveness of engineered barriers to prevent releases over long time periods. As a result, guidance and review methods such as numerical modeling that will be used for determining compliance with these regulations also need continued development and revision to reduce uncertainties and incorporate new information. In addition, we will maintain and enhance the technical competence of the NRC staff by appropriate recruiting and training. Similarly, we will assure the continuity of needed expertise from our support contractors such as the Center for Nuclear Waste Regulatory Analyses. Adequate expertise is especially important in specialized skill areas needed for unique work such as performance assessment modeling for a geologic repository or dose modeling for decommissioning.

For programs where new technology is involved or where regulations or guidance are new or evolving, interactions with applicants will be important to discuss acceptable ways to comply with the regulatory requirements. Furthermore, as appropriate for the individual waste arena programs, risk-informed and performance-based approaches will be incorporated incrementally as the tools of the regulatory framework are being developed. By applying these tools through the other strategies, risk-informed approaches will be applied to various regulatory oversight activities such as reviews and inspections. As a result, oversight can be decreased for those activities that pose low radiological risk to the public and emphasis can be given to high-risk activities. Finally, the Agreement State regulatory programs will be reviewed to determine adequacy and compatibility with NRC's regulatory framework. NRC will continue to re-evaluate its regulatory framework to identify improvements as discussed in one of the following strategies.

- *We will continue authorizing licensee activities only after determining that these proposed activities will be conducted in accordance with the regulatory framework.*

Authorizations such as licenses, certificates of compliance, and amendments or renewals will be issued only after safety and environmental regulations have been adequately addressed. This includes decommissioning, emergency planning, physical protection, quality assurance, training, financial assurance, and other requirements. The regulatory framework will be applied to independently evaluate the applicant's demonstration that the proposed activities comply with the regulations. These evaluations will include conducting safety and environmental reviews; some independent staff analyses; resolving issues; and documenting the technical bases and findings in publicly available safety evaluation reports and either environmental assessments or environmental impact statements. In addition, the adjudicatory hearing process will support final licensing decisions. Furthermore, as the

Agreement States conduct their licensing reviews, we will consider providing technical assistance when requested.

- *We will confirm that licensees understand and carry out their primary responsibility for conducting activities consistent with the regulatory framework.*

For licensees with operating facilities or who are conducting decommissioning or reclamation activities, inspections or other independent approaches (e.g., third party reviews) will continue to be important methods to verify that ongoing licensee activities remain in compliance with the regulatory requirements and that safety issues are identified and resolved before they affect safe operations. We will use the risk-informed regulatory framework to inspect licensees at varying frequencies and with varying techniques, depending on the risks of their activities. Increased attention will be given to licensees with marginal performance by distributing inspection resources on the basis of licensee performance. Enforcement sanctions for violations of regulatory requirements will be used if appropriate. In addition, allegations regarding licensee performance will be appropriately and objectively addressed in a timely manner.

- *We will maintain the capability to respond to operational events involving potential radiological consequences.*

The NRC technical staff will have sufficient skills and knowledge to support the agency in responding to operational events. Additional support will be provided by the continuously staffed Incident Response Operations Center. Periodic exercises will be conducted to ensure response organizations are proficient and experienced staff are trained to respond to operational events according to their safety significance. Incident investigation capabilities also will be maintained. The above activities contribute to maintaining safety by: providing timely, accurate, and complete assessments of events; by evaluating recommendations of the licensee for actions to protect the public; and by coordinating with other federal agencies, state and local governments and the licensee.

- *We will evaluate potential new information from research, new safety issues, changing external factors, international programs, and licensee operational experience so that improvements can be made to maintain an adequate regulatory framework.*

A wide variety of changes to the external environment are expected that have the potential for impacting future waste arena activities. We will evaluate this new information and make appropriate changes to the regulatory framework. Political and economic factors could redirect waste arena programs. For areas of technical uncertainty, improvements in

knowledge or advances in technology are possible which might identify or resolve safety issues. In addition, the operational and regulatory experience that will be gained both domestically and internationally could raise new safety issues as well as suggest approaches to resolve them. As a result, research and technical studies can identify where improvements are necessary to maintain the adequacy of the regulatory framework and its technical basis.

- *We will keep pace with the national high-level waste management program. We will apply the regulatory framework to prelicensing reviews and consultations with DOE to resolve the issues most important to repository safety and prepare for completing a licensing decision within the statutory time period.*

Consultations with DOE and prelicensing reviews of DOE's program at the Yucca Mountain site will continue to focus on resolving the key technical issues most important to safety of the repository. These reviews will apply the regulatory framework and will be further risk-informed by results of the staff's independent safety assessments of both preclosure and postclosure repository performance. Feedback from our assessments and reviews will provide DOE with timely guidance regarding the sufficiency of its program for providing a complete license application for the geologic repository that also supports a licensing decision within the three-year statutory time period. These reviews and consultations will prepare the Commission to comment on the sufficiency of DOE's site characterization and waste form that are required by NWPA to be included in the President's site recommendation to Congress.

Measures and Metrics

Measure	Metric
1. Number of overexposures that exceed applicable regulatory limits/standards.	Zero
2. Number of substantiated breakdowns of physical security that significantly weaken the protection against radiological sabotage or theft or diversion of special nuclear materials.	Zero
3. Number of actual releases[5] to the environment from operational activities that exceed applicable limits/standards.	Zero
4. Number of instances where radioactive waste and materials under NRC's regulatory jurisdiction cannot be handled, transported, stored, or disposed of safely.	Zero
5. Number of events that occur during NRC regulated operations that cause impacts on the environment that cannot be mitigated within applicable regulatory limits, using methods that are within available licensee resources and are not cost prohibitive.	Zero

These measures utilize regulatory limits and standards and represent lower thresholds than the strategic measure data. They were chosen to identify processes or procedures, which have led to events of limited significance, but which if not corrected, could lead to abnormal occurrences. Thus they are indicators of potential failure to achieve the strategic goal in this arena. They were chosen to identify events where NRC can monitor its success in assuring that: all radioactive waste and materials under NRC responsibility can be handled, transported, stored, or disposed of safely; no events occur that result in public or worker over exposures or releases that exceed applicable regulatory limits; no losses of control of radioactive waste and regulated materials occur; and no events occur during NRC regulated operations which cause an impact on the environment.

[5]In addition to radiological releases, this measure also includes chemical releases from NRC regulated activities under the Uranium Mill Tailings Radiation Control Act.

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Performance Goal: Increase Public Confidence

NRC views public confidence as an important performance goal for the Agency. NRC desires that diverse stakeholder groups increasingly recognize that NRC's actions assure that public health and safety and the environment are, and will remain, adequately protected from radioactive materials and waste. In order to reach this goal, NRC must be viewed as an independent, open, clear, and reliable regulator dedicated to protecting the public's health and safety and the environment.

For this performance goal, the public means a diverse group of stakeholders who are affected by or who affect NRC's regulatory programs in this arena. Stakeholders include: Congress, NRC and Agreement State licensees, other Federal agencies, States, Indian Tribes, local governments, industry, the industry workers, the international community, citizen groups, and rate payers.

The NRC must forthrightly inform the public about nuclear safety incidents and issues, and provide avenues for meaningful input and dialogue. This goal also recognizes that although the public may not always agree with NRC's actions, public confidence in NRC is enhanced when the Agency consistently listens to all interested parties, considers their input, and makes its decisions in a thorough, disciplined, and timely manner.

Public concern about the safety of nuclear waste arena activities is high, particularly for those who may live near these regulated activities. Although NRC has conducted its regulatory oversight openly and has provided information to a variety of stakeholders, it recognizes the need for improvement.

<u>Strategies</u>

- *We will expand stakeholders access to the NRC. We will listen to their concerns and provide more opportunities for them to be more fully involved in the regulatory process.*

  One of the attributes of strong and fair regulation involves consistent and early public involvement. The agency recognizes the public interest and concern in the proper regulation of waste arena activities. The agency further recognizes its responsibility to provide opportunities for meaningful public interaction and involvement. NRC will listen to, and be responsive to requests, inquiries, and concerns from the public, elected representatives, licensees, and other stakeholders in the national and international community. We will provide opportunities for the public to bring information and issues to NRC by holding open meetings in the vicinity of those affected; providing adequate notice of meetings; developing and implementing communications plans for major regulatory activities; and holding workshops. We will consistently consider this input from the public in planning changes and making decisions relating to our practices, rules, and processes.

- *We will communicate more clearly. We will add more focus, clarity and consistency to our message and present information in the proper context with respect to the risk of the activity.*

  Public confidence in the NRC will be enhanced by avoiding unnecessarily raising stakeholder concerns if the information is presented in a manner that is easily understood. Whenever possible, we will use quick, personalized forms of contact with our stakeholders. Our communications with the public will be designed to foster greater understanding of, and confidence in, our regulatory program. NRC will clearly communicate to and educate stakeholders about its precise role in the waste arena. The information we disseminate will be clear, technically sound, accurate, reliable, objective, and timely. We will take full advantage of the Internet and new technology for information dissemination. We will protect the privacy as well as the proprietary and classified nature of information. All stakeholders should be able to rely on our statements and information as being objective and not promotional.

- *We will enhance NRC's accountability and credibility. We will assure that NRC's activities are consistent with its mission.*

  The public's confidence in nuclear waste arena activities is influenced by its perception of NRC as a competent, independent regulator. Therefore, we will explore ways to survey our stakeholders to determine our performance strengths and weaknesses, and develop future strategies based upon these results. We will candidly acknowledge our mistakes and our failures to meet our commitments. Finally, as part of implementing a Planning, Budgeting, and Program Management (PBPM) process, we will prepare a Strategic Plan that provides visibility to our performance goals and measures. We will manage to that performance and will measure and report on achieving performance goals as they relate to public health and safety and the environment.

  Public confidence is also influenced by information about licensee performance. We will collect information about licensee performance in the waste arena and report that information objectively to the public. Where licensee performance is outside established criteria, corrective action will be taken and communicated to the public. Where safety or environmental issues are raised, we will communicate to the public how these issues are being addressed.

- *We will foster an environment where safety issues can be openly identified without fear of retribution.*

  Public confidence is enhanced in an environment where safety issues can be raised and addressed without fear of retribution. Examples of how this strategy will be implemented in this arena include: conducting NRC's 10 CFR 2.206 petition process, responding to

allegations, addressing safety-conscious work environment concerns, and, implementing NRC's programs for differing professional views/opinions. We will also participate in the agency's pilot program to solicit feedback from individuals raising safety issues to assess the effectiveness of NRC's handling of allegations. Finally, we will encourage licensees and applicants to be open and responsive to the public affected by their regulated actions.

Measures and Metrics

Measure (examples for discussion, see below)	Metric
1. Percentage of improvement in public confidence that the public is safe now and in the future.	TBD (Increase)
2. Percentage of improvement in public confidence that the environment is protected now and in the future.	TBD (Increase)
3. Percentage of improvement in public confidence that the common defense and security is maintained now and in the future.	TBD (Increase)
4. Percentage of improvement in public confidence that the NRC is an independent, open, clear, reliable, and efficient regulator.	TBD (Increase)

Measures are needed to evaluate whether we have achieved our performance goal of increased public confidence. The NRC is currently exploring a survey mechanism to measure public confidence in general, for specific groups, and possibly for specific issues and program areas. The above example measures will be replaced by actual measures after decisions are made to carry out the survey, how it will be conducted, and initial results. Whatever method is selected would address questions such as: (1) whether regulatory activities are independent, fair, predictable, based on sound science, and responsive to public input; (2) whether the public generally believes NRC regulatory activities and actions will protect the public, the environment, and the common defense and security; and, (3) whether the public generally understands NRC regulatory activities and actions. We will provide revisions to the Strategic Plan when the actual measures and metrics are available. During the interim, we will identify and report our efforts to increase public confidence in our annual performance plan and performance report.

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Performance Goal: Make NRC activities and decisions more effective, efficient, and realistic.

NRC will continue to seek improvements in its regulatory processes to become more effective, efficient, and realistic. NRC will identify and focus on necessary and sufficient regulatory activities that are linked to its goals. In those regulatory activities, NRC will strive to optimize regulatory programs and processes, where possible, while assuring safety and improving public confidence. In working toward this goal, NRC will apply its principles of good regulation; for example, efficiency, clarity, and reliability are most closely applicable to this goal.

NRC will ensure its decisions are scientifically-based, risk-informed, and shaped by operational experience, new information, and research. As a result, NRC's decisions will be realistic, systematic, and appropriately treat areas of uncertainty. NRC will ensure its procedures, processes, and expectations are better defined, clearer, and more transparent. NRC's regulatory actions will support more consistent, reliable, predictable, and timely decision-making. Furthermore, NRC will seek to minimize duplication of efforts with stakeholders.

By striving to become more effective, efficient, and realistic while continuing to assure adequate protection of the public health and safety, NRC intends to keep regulatory burden and related costs to licensees, applicants, and ultimately the public, as low as practical. NRC will capitalize on advances in technology and implement changes to improve internal processes related to regulatory activities. Furthermore, NRC will strive to be less prescriptive and will apply risk-informed, performance-based approaches where it is appropriate to do so.

Effectiveness means producing the necessary and sufficient work to achieve our goals. NRC must periodically challenge the value of NRC programs and activities based on how they contribute to the achievement of goals. NRC business processes and regulatory decisions will reflect high standards of quality and be technically sound. Specific challenges in this regard involve: (1) risk-informing NRC’s regulatory programs; (2) preparing to address evolving technologies and a changing regulatory environment; and, (3) improving predictability and consistency of agency decisions.

Efficiency means conducting our work productively and on time. Efficiency will be enhanced by simplifying or streamlining our internal processes based on self assessment and experience, using improved tools, and becoming more timely and predictable in delivery of services and decisions.

In order to become more effective and efficient, NRC will plan and schedule its work activities and identify key milestones to monitor progress. When issues emerge, NRC will readjust plans and schedules, if necessary, to ensure attention is focused on the highest priority activities and conducted efficiently.

NRC decisions will be made more realistic by eliminating excessive conservatism. Realism is supported by risk information, research results, and operational experience.

Strategies

- *We will assure that agency decisions are based upon technically sound and realistic information.*

  We will focus resources in those areas where important gaps in information exist, where uncertainties exist about the significance to risk, and where the degree of conservatism in safety margins has not been quantified. We will develop and maintain tools and methods for decision-making which reflect recent scientific information and consider remaining uncertainties. We will ensure that our decisions on significant safety and environmental issues are supported by high quality and realistic technical information, staff expertise, and methods.

  To support this strategy, we will develop a staffing and contractor support plan to ensure an effective and efficient workforce. Particular attention will be given to recruiting, training, and retaining those specialized skills needed to conduct waste arena activities (e.g., geologic repository performance assessments, dose assessments, hydrogeology). We will optimize our application of information technology, develop and use new tools and methods, and use realistic assumptions to make regulatory decisions. Furthermore, we will develop and revise appropriate guidance so that applicants and staff have a clear and consistent understanding to develop and review licensing applications, respectively. This guidance should minimize the staff's requests for additional information and subsequent additional reviews, as well as allowing the staff to prepare for and conduct inspections. We will anticipate, through research and technical studies, regulatory challenges that may come from industry's introduction of new technologies or from changing regulatory demands. Similarly, we will use research and technical studies to reduce unnecessary conservatism and ensure realistic information is used in the decision-making process.

- *We will prioritize our work, then plan and schedule activities accordingly to achieve desired outcomes.*

  We will fully implement a disciplined, integrated planning framework - the Planning, Budgeting, and Performance Management process - and will transition to a more outcome-focused organization. Through this process, our programs and activities will be chosen and prioritized based on the significance of the contribution of the work to the achievement of our performance goals. The chosen programs will be planned, scheduled, managed, monitored, and assessed through this process. When issues emerge, we will readjust our

plans and schedules, if necessary, to ensure attention is focused on the highest priority activities and conducted efficiently.

- *We will identify, prioritize, and modify processes that allow for the most leveraged improvement.*

  We will continually improve and standardize our processes through a robust program of self-assessment and application of lessons learned. In particular, effectiveness reviews of program and program support areas will be conducted to determine what work needs to be added, maintained, reduced, or eliminated in order to deliver the desired outcomes. Efficiency reviews of key processes in program and program support areas will be conducted to determine the most efficient means of delivering the desired outcomes.

- *To the extent practical, we will use risk information to improve the effectiveness, efficiency, and realism of our activities and decisions.*

  As part of our agency-wide Probabilistic Risk Assessment Implementation Plan, we will conduct an integrated evaluation of risk information, inspection findings, operating experience, research results, and cost data to identify ways to improve the effectiveness of NRC regulatory requirements, guidance, and processes. We will improve our ability to conduct effective safety assessments by employing risk-informed methods and data. We will develop the tools and information needed to support realistic (versus overly conservative) decision-making. We will ensure, by using risk assessment techniques for differentiating between high and low-risk activities, that our regulatory focus is on those activities that pose the greatest risk to the public. To improve efficiency in our use of risk information in our activities and decisions, we will leverage our knowledge of risk information through participation in international cooperative programs. We will develop guidance to ensure that specific applications of risk assessment methods are suitable and that there is consistency in their use in our decision-making process. It should be noted that due to the diversity of programs within the waste arena, risk assessment techniques will only be used where the subject matter is amenable to a risk assessment strategy and where the greatest benefit could be derived. Finally, an overall element of this strategy will be to ensure that NRC will react to an event or issue commensurate with the associated level of risk.

- *We will push decision-making to the lowest practical level consistent with the regulatory framework.*

  To achieve continuous improvements in staff effectiveness and efficiency, we must empower the NRC staff. We will develop a plan and infrastructure to implement this strategy in a manner consistent with the regulatory framework. This plan and infrastructure

will provide employee empowerment and accountability to take appropriate and necessary regulatory action and make regulatory decisions that are within the scope of their assigned responsibilities. We will develop a process to determine the appropriate level of regulatory decision-making for specific types of decisions. This should streamline and simplify the technical and management review and approval process, including the elimination of certain reviews. We will increase the authority of the staff and will work to establish a supportive environment that is based on individual empowerment, collegial assistance, and management trust. We will train management and staff on approaches to enhance quality and team building and improve collegial interaction. Furthermore, we will ensure that the staff's discussions are supported by high quality and realistic information. We will also pursue opportunities to leverage information technology to achieve the effectiveness and efficiency goal.

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Measures and Metrics

Measure	Metric
1. Number of key process improvements achieved in selected program and support areas which increase efficiency, effectiveness, and realism.	2 process improvements per year
2. Percentage of licensing reviews and inspections that are scheduled and completed on time.	95%
3. Number of program deficiencies identified by internal or external sources (e.g., requests for rulemaking, 10 CFR 2.206 petitions, operational experience) where potential significant safety, environmental, or safeguards impacts were not adequately considered or where significant operational impacts occur.	Less than or equal to two per year
4. Completion of major pre-licensing milestones needed to prepare for a licensing review of the Yucca Mountain repository within the statutory time frame. The milestones are: (1) final regulation in 10 CFR Part 63, (2) Yucca Mountain Review Plan, (3) Site Characterization Sufficiency Comments, (4) comments on DOE's draft Environmental Impact Statement, and (5) resolution of key technical issues at the staff level.	Complete the 5 milestones consistent with DOE's schedules and before DOE submits its license application

Measures were selected that address effectiveness, efficiency, and realism. For effectiveness, our first measure is intended to improve key processes to better focus on the necessary and sufficient work. The third measure addresses the quality of our processes so that our products have minimal deficiencies. The fourth measure addresses completing the necessary preparations so that our repository licensing review, a highly visible and significant milestone for the national waste management program, is effective. Regarding efficiency, the first measure addresses improvements that simplify or streamline processes. The second measure addresses both setting schedules for our work and completing them on time. Realism would be addressed within each measure since an excessively conservative activity, information, process, role, or other regulatory matter could lead to an inappropriate regulatory action or decision.

Together, these measures were chosen to identify the conditions under which NRC would make continuous progress to assure that: its regulatory processes (i.e., rulemaking, licensing, inspections, and enforcement) are viewed as a model for the public sector and its non-programmatic activities are viewed as a model for the public/privates sector, its regulatory activities take into consideration appropriate safety and environmental impacts in accordance with applicable statutes and regulatory requirements, and, its decisions are technically sound and based on realistic information. These are ideals which the NRC strives to achieve. Failure to achieve these metrics would result in a management review to determine the need for any change in management and technical review regulatory processes.

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PERFORMANCE GOAL: Reduce unnecessary regulatory burden on stakeholders.

NRC will reduce unnecessary regulatory burden and associated public costs where possible, while achieving the other three performance goals. Unnecessary regulatory burden for NRC licensees may be defined as a set of regulatory licensing information and procedural requirements that goes beyond what is necessary and sufficient for providing reasonable assurance that public health and safety, the environment, and the common defense and security will be protected. The costs associated with NRC activities can impact a variety of NRC stakeholders. For some stakeholders, such as States and the public, costs could potentially result from actions by States to augment the NRC regulatory program, cleanup sites, or dispose of radioactive material using public funds. For others, such as applicants and licensees (and ultimately the public), burden may be imposed by inappropriate technical review procedures, or excessive fees.

Although regulation, by its nature, is a burden, NRC will ensure that only the level of burden necessary to maintain safety is imposed on licensees. This can be achieved by using risk-informed and performance-based approaches, where justified, to focus attention on those areas of highest safety priority and by making more realistic decisions with no undue conservatism.

Consideration will be given to making regulatory burden commensurate with the risk of the regulated activity. Furthermore, regulatory burden associated with a safety enhancement will be considered in light of a cost benefit analysis prior to the imposition of a new regulatory requirement. Regulatory oversight will be fair, consistent, effective, and timely in its application. Costs associated with the regulatory infrastructure must be fair, equitable, and shared by all users.

NRC believes that some of the regulatory burden in the Nuclear Waste Safety arena associated with the regulations and practices in place over the years was not commensurate with the safety benefit. During these years, an ever increasing body of technical knowledge, operational experience, and development of risk assessment tools have been accumulated. This has allowed recent refinements and significant enhancements to NRC regulations, programs, and guidance. Continuing these ongoing efforts and increasing the attention to implementing the new rules are critical to implementing a more risk-informed regulatory framework for these programs. These efforts will provide the basis for further reducing unnecessary regulatory burden.

Strategies

- *We will use risk-informed and performance-based approaches, where appropriate, to make improvements to our regulatory programs that will reduce unnecessary regulatory burden to our stakeholders.*

We will use risk-informed and performance-based approaches, where appropriate, to ensure that all elements of our regulatory programs (i.e., regulations, guidance, licensing, assessment, inspection, and enforcement) are conducted commensurate with the level of risk. If necessary, we will modify or delete regulations and guidance that provide little or no safety benefit. We will focus on less prescriptive and more risk-informed and performance-based regulatory approaches to provide licensees with flexibility in meeting regulatory requirements. The scope and priority of changes in our regulatory processes will consider stakeholder input and the cumulative effect on agency and licensee burden reduction.

- *We will identify and implement improvements to our regulatory processes that result in eliminating unnecessary costs to our stakeholders.*

We will make improvements to those aspects of our regulatory processes and implementation that result in unnecessary costs to our stakeholders. In particular, we will evaluate the adequacy of guidance; the timeliness of actions; and, the necessity of dual regulation with other federal and state entities. We will also continue to streamline the decommissioning process. In addition, we will use research and technical studies to evaluate new information in order to identify areas in our regulatory programs where unnecessary burden can be reduced. New information includes improvements in knowledge, advances in technology, and insights gained from operational and regulatory experience both domestically and internationally. Research will focus on identifying where unnecessary conservatisms can be eliminated or reduced.

We will evaluate the sufficiency of funding and sureties for remediation of sites. In addition, we will assure that NRC actions minimize the potential for future bankruptcies of companies resulting from remediation of uranium recovery facilities or decommissioning of facilities. For example, we will assure NRC actions are timely and do not cause undue delays while waiting for a NRC decision or impose overly conservative solutions all of which could result in higher cost from either maintaining or remediating a site.

- *We will actively seek stakeholder input to identify opportunities for reducing unnecessary regulatory burden and explain the sufficiency of our regulatory framework and decisions.*

  We will encourage licensees to identify for NRC consideration concerns with NRC's regulatory programs, such as untimely, inadequate, or inappropriate staff actions, that have resulted in unnecessary cost. In addition, we will continue initiatives to interact with stakeholders to ensure a mutual understanding of existing regulatory requirements, guidance, or licensing decisions. Such interactions will provide opportunities for stakeholders to identify problems or suggest improvements. NRC will also be able to clarify or explain the basis for requirements, guidance, or licensing decisions and why we believe they are sufficient. Where guidance is being developed or used for the first time, we will invite stakeholder feedback to identify aspects of the guidance that might be unclear, unnecessary, inflexible, or otherwise considered excessively burdensome by the licensee. Where licensees are using new requirements or guidance for the first time to prepare specific submittals, we will be available to interact with them upon request during the development of the submittals to resolve implementation questions or technical issues they identify that might help them prepare an acceptable submittal.

Measures and Metrics

Measure	Metric
1. Number of instances where licensees bring forward valid complaints that untimely, improper, or inadequate staff action has resulted in an unnecessary cost.	TBD
2. Number of instances where any non-licensee stakeholder has to take action as a result of an NRC action that is deemed insufficient.	TBD

These measures represent judgements as to the number of times agency actions have resulted in undue burden. They were chosen to recognize licensee and non-licensee stakeholder burden and to identify where NRC needs to focus its attention to assure that: its regulatory programs are protective at reasonable cost and without excessive conservatism; and, the burden imposed on applicants and licensees is commensurate with the risk of the regulated activity. The NRC will be evaluating instances of unnecessary regulatory burden identified by licensees, applicants, States, and other stockholders resulting from NRC actions. Examples of such actions are: States wanting to augment the NRC regulatory program, cleanup of sites of disposal of radioactive material with public funds, inappropriate technical reviews, and excessive fees. Staff would evaluate the validity of written licensee complaints and overt independent stakeholder action resulting from NRC staff action that is untimely, inappropriate, incomplete, inconsistent, unclear, or excessively conservative.

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MAJOR EXTERNAL FACTORS AFFECTING THE NUCLEAR WASTE SAFETY ARENA

Listed below are assumptions about major external factors and how they might affect achieving the goals of our nuclear waste safety arena.

- Permanent disposal of high-level waste (HLW) will continue to be a goal of the national program, and the NWPA and EnPA statutory requirements will remain in effect. Furthermore, DOE will continue its plan to submit a site recommendation to the President in FY 2001 and a license application to the NRC in FY 2002 for a geologic repository at the Yucca Mountain site. However, uncertainty exists about whether and how Congress might change the national program in future legislation.

  Future legislation could define a high-level waste disposal standard and/or specify new agency responsibilities for standard development. Such changes would affect completion of our regulation and Yucca Mountain Review Plan. Changes in DOE's schedule would affect NRC's schedules for conducting its pre-licensing reviews, commenting on site characterization sufficiency, and making a licensing decision for the proposed geologic repository. Other significant legislative changes could affect our spent fuel storage and transportation activities as well such as: initiating an integrated spent fuel storage and transportation strategy that includes a national centralized interim spent fuel storage facility, mandating that DOE "take title" to the spent nuclear fuel at the commercial reactor sites, or designating spent nuclear fuel as a resource for use rather than as a waste product for disposal.

- Regardless of the actions that the Congress may take, spent fuel at commercial reactor sites continues to mount, which will almost certainly require an increase in the use of dry cask storage technology and the licensing of independent spent fuel storage installations.

  Commercial reactor licensees will need to increase spent fuel storage capacity over the next several years. Interim storage of spent fuel will continue at commercial independent spent fuel storage installations (either under a general license or a site-specific license), and a commercially-sponsored away-from-reactor central interim storage facility is under review (i.e., Private Fuel Storage, L.L.C.). While progress has been made in the review of spent fuel storage facilities and dual-purpose (spent fuel storage and transportation) cask systems, anticipated licensing actions are expected to increase. Moreover, NRC may receive an application for a second away-from-reactor central independent spent fuel storage installation to store commercial reactor spent fuel. Also, licensees will need to prepare to transport spent fuel. Furthermore, depending upon the legislative action taken by Congress regarding DOE taking title to the spent fuel at each commercial reactor site, licensees may decide to begin storing fuel in dry cask storage at their site on an accelerated schedule. Moreover, DOE itself (or its contractor) may submit a license application for the storage of spent fuel at a DOE facility.

Finally, if new spent fuel storage and transportation technologies are introduced, NRC will need to become knowledgeable in the new areas in order to review, approve and inspect the new designs. Additionally, as DOE delays taking spent fuel from the licensees, dry cask storage certificates and independent spent fuel storage installation licenses will have to be renewed. This may present technical challenges that have not been considered.

- Differences will continue among Federal agencies regarding an acceptable level of risk and groundwater protection. These differences contribute to uncertainty about completing the regulation and review plan for the high-level waste repository program and the finality of our license termination decisions for decommissioning.

  Delays and higher costs may result if revisions or additional requirements and supporting technical bases are needed for the high-level waste repository. Lack of finality for decommissioning decisions could cause additional work to be done by the licensee or impact the licensee's future plans for the use of a site. Agency differences, will also unnecessarily complicate the public's understanding of the acceptable level of protection for the public. Furthermore, continued lack of resolution will diminish public confidence in the credibility of both NRC and EPA and would also give the appearance to the public that NRC is less protective than EPA.

- There will continue to be substantial public interest and involvement in all nuclear waste arena activities. Opposition to many actions will continue that will require specific attention depending on program or site-specific factors.

  With respect to the performance goal of increasing public confidence, interactions with the public are important for generating understanding of and confidence in NRC decisions. This confidence is generally based on the public's perceptions regarding the regulator and the industry. Some of these perceptions are based on: 1) actual experience with NRC and its performance, 2) external factors (e.g., media reports, political commentaries, special interest group efforts, and industry group statements) that may or may not be closely linked to our actual performance, and 3) operational events such as accidents at Three Mile Island and Chernobyl even though the impact on health and safety of the first accident was minimal and the facility involved in the second accident was outside NRC's regulatory control. To many, confidence (or lack of confidence) in the regulator and in the regulated community cannot be clearly separated. Therefore, we recognize the potential that our activities and the licensee's activities jointly contribute to, or erode, the public's confidence and may cause us to take additional measures to assure the public.

  Responding to public interest and improving public involvement will result in additional resource costs to both NRC and licensees. However, if additional resources are invested early in a project to obtain input from the public, a better quality product should result and

costs could be reduced later in the project to address more entrenched opposition or resolve conflicts. Recent experience with our public workshops for the release of solid materials (i.e., clearance rulemaking) illustrates another challenge. In some cases, public interest groups have boycotted our workshops because of their opposition, thereby precluding our initiatives to inform these stakeholders and obtain their input about this important issue. Such resistance will result in additional costs for our future efforts to inform and involve important stakeholders. In any case, our efforts may not be successful and could negatively affect our overall goal of improving public confidence in NRC as a regulator.

- The clean-up and long-term institutional control of permanently shutdown nuclear materials facilities will be a challenge where responsible parties lack adequate resources.

  For some decommissioning sites, clean-up costs are projected to be very high (well over $100 million in some sites) and beyond the financial capability of licensees and responsible parties. In some cases, corporate pressure is strong to minimize remediation costs, especially when operations have ceased and the facility is no longer a source of corporate income. In other cases, the costs may bankrupt corporations and then be passed along to the public. We recognize the desire of responsible parties to minimize costs, and we will assure that unnecessary costs will not occur. However, we must take the necessary regulatory actions, including financial assurance, so that remediation can be completed consistent with our regulations to assure meeting the performance goal of maintaining safety and protection of the environment.

- Agreement States will continue to assume responsibility for decommissioning SDMP sites. In FY 2002 eleven sites will be transferred to Pennsylvania and one will be transferred to Minnesota.

  The twelve sites that we are assuming will be transferred to the Agreement States makeup about half of the twenty-six Site Decommissioning Management Plan (SDMP) sites that we are currently responsible for. Therefore, should these schedules for site transfer be delayed, major changes will be needed to our plans and schedules for the decommissioning program. Such changes could also affect the efficiency of our work.

- The continued availability of low-level waste (LLW) disposal capacity is uncertain and will largely be determined by external factors. For example, the continued availability of the LLW disposal facility at Barnwell, South Carolina, will be determined in the future by the governor and legislature of South Carolina after a task force explores options for the State to discontinue being a national LLW disposal site.

  Closure of or access restrictions on operating LLW disposal facilities could force dispersed storage of waste. Should this occur, we would need to complete the guidance for LLW storage that was begun in 1994, but suspended because of the reopening of the Barnwell

facility later in that year. Other potential impacts include delays in decommissioning of large facilities and an increased interest by licensees in alternatives to conventional disposal, such as increased use of RCRA cells for slightly radioactive materials. There could also be license applications for new facilities from private companies, or for a new LLW management technique, assured isolation, both of which could require NRC resources to address.

- The number of uranium recovery licensees and licensing actions will decrease because the value of uranium will remain low and result in uranium mills remaining shut down or operating on a limited basis. However, there will be a significant increase in the number and complexity of petitions for hearings and litigation concerning clean-up of sites and long-term monitoring and maintenance. This change results from greater public opposition and increased involvement by environmental organizations.

The above external factors will cause a shift of resources from licensing reviews to support for hearings and litigation.

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FY 2000 - 2005 STRATEGIC PLAN
SCHEDULE

The current schedule for the FY 2000-2005 Strategic Plan as provided in the CFO's October 26, 1999, memorandum to the Chairman.

Week of Nov. 15:	Submit draft Nuclear Waste Safety Chapter to the Commission
Week of Dec. 6:	Submit draft Nuclear Materials Safety Chapter to the Commission
Week of Jan. 17:	Submit draft International Nuclear Safety Support Chapter to the Commission
Week of Feb. 7:	Submit complete draft strategic plan to the Commission
Week of March 6:	Receive Commission comments on draft strategic plan
Week of March 20:	Provide draft strategic plan to stakeholders for comments
Week of April 17:	Receive stakeholder comments on draft strategic plan
Week of May 1:	Submit revised draft strategic plan to Commission
Week of May 22:	Receive Commission comments on revised draft strategic plan

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Nuclear Reactor Safety[7]

Nuclear Materials Safety

Nuclear Waste Safety

International Nuclear Safety Support

Corporate Management Strategies

(Provides a more indepth description of the strategies and their connections to the human resource plan and information technology plan)

[6] Includes strategic and performance goals, strategies, measures and metrics.

[7] Provides more indepth description of the strategic and performance goals, strategies, measures and metrics, major external factors including how they may affect acheiving goals, and the statutory authority on which NRC's responsibilities are based. The Nuclear Waste Safety chapter provided in Attachment 1 is an example of the content of this section.

Links to other NRC planning documents

(Identifies key documents linked to and complementary of the strategic plan, e.g., performance plan, program evaluations)

Crosscutting Functions

(Major NRC activities conducted with other government agencies to achieve a common purpose)

Strategic Plan Component Schematic

(Explains relationship of goals, measures, and strategies.)

Responsiveness to Audit Reports

(Describe steps being taken to resolve mission-critical management problems.)